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ECONOMIC GROWTH IN THE MIDDLE EAST, 1950-72

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Discussion Paper No. 82 June 1980

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ABSTRACT

The first part of this paper presents estimates of per capita GNP in constant U.S. dollars for each of the 23 countries of the Middle East in each of the years from 1950 to 1972. The method of estimation is based on the use of physical indicators like the number of telephones per capita, a method which is domonstrably superior to the conventional procedure of using official exchange rates to convert national currency estimates of GNP into dollar estimates. The second part reviews the main causes of the upturns and downturns in the per capita GNP growth curve for each country. This review leads to some generalizations about the causes of eocnomic growth and decline in the Middle East during the period in question.

SOMMAIRE

La première de ce document offre des estimations individuelles du PNB, en dollars constants des 23 pays du Moyen-Orient pourchacune des vingt-deux années allant de 1950 à 1972. La méthode employée est basée sur l'utilisation d'indicateurs physiques tels que le nombre de téléphones par habitant. Cette formule s'avère infiniment supérieure au procédé plus conventionnel employant les taux de change officiels pour la conversion des estimations de la monnaie nationale en estimations de dollars. La seconde partie examine les causes principales des retournements positifs et négatifs de la courbe de croissance du PNB individuel de chaque pays. Cette analyse permet d'élaborer plusieurs généralisations concernant les origines de la croissance et du décline économiques au Moyen-Orient pendant cette période.

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I. INTRODUCTION

The year 1973 was clearly a turning-point in the recent economic history of the Middle East. On October 1 of that year, the price of Arabian Light, a representative type of Middle Eastern crude oil, stood at $3.01 per barrel. On October 16, following the outbreak of the Arab-Israeli war, the price rose to $5.12. By January 1, 1974, the price had reached $11.65, as OPEC further exploited its opportunities for cartel profits. In consequence, there was an international transfer of purchasing power -- from oil importers to oil exporters -- unprecedented in its scale and suddenness. The Middle East has been the major beneficiary of this transfer. Of the twenty-three countries in this region (as defined here), ten were by that time important exporters of oil, and benefited directly from the transfer. Other Middle Eastern countries benefited indirectly, as the oil states expanded their demand both for imported commodities and for immigrant labor, and stepped up their programs of financial assistance to less favored parts of the region. So 1973 saw the start of an acceleration of Middle Eastern growth that was both rapid and widely diffused.[1]

For most countries of the region, the years before 1973 can therefore be treated as a distinct phase of economic development, differing in several respects from what came later. It is the purpose of this paper to review the economic performance of the Middle Eastern economies during this earlier period. The year 1950 is chosen as a starting point. By this date, recovery from the major dislocations caused by the Second World War was largely complete, and national accounts began to be available in greater abundance. The measure of economic performance which is used here is per capita gross national product expressed in U.S. dollars of constant (1976) purchasing power. In Section II of the paper, some methodological problems involved in estimating per capita dollar GNP are discussed. In Section III, charts detailing the annual growth of per capita

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1. Furthermore, three of the countries without large oil deposits--Morocco, Tunisia, and Jordan--were significant exporters of phosphates, and so benefited from the fourfold increase in phosphate prices which occurred between 1973 and 1974.

GNP between 1950 and 1972 in each of the countries of the region are presented. In Section IV, some comments are offered on the factors explaining the ups and downs of the growth curve in each country.

Of course, estimates of per capita GNP in constant dollars are already available for Middle Eastern countries in such publications as the United Nations' Statistical Yearbook and the World Bank's World Tables, and it may be asked what this paper has to offer beyond what already exists. Three points may be made. First, earlier estimates for the years going back to 1950 are scattered across several different publications, and there is some convenience in having everything brought together in one place. Second, an attempt is made here to provide per capita GNP estimates for all twenty-three countries of the region in each of the twenty-three years of the chosen period--a total of 529 separate estimates, many of which have no precedents in existing sources. Third, the method used here for expressing per capita GNP in U.S. dollars is demonstrably superior to the method conventionally used, which involves applying official exchange rates to GNP estimates expressed in national currencies. As a result, the relative ranking of the Middle Eastern countries according to their per capita dollar GNP is somewhat different here from that normally reported.

It is probably necessary to add a word in defense of per capita real gross national product as a measure of economic performance. In recent times, various inadequacies of this measure have been stressed. There is, for example, the environmentalist argument that growth in the GNP is normally accompanied by environmental damage and therefore exaggerates the actual increase in material well-being that has occurred. There is the egalitarian argument that an increase in per capita GNP may not entail any improvement for low-income groups if the distribution of income has become more unequal at the same time. These points have some merit, but they do not render per capita GNP useless as a measure of well-being. There seems to be a high degree of correlation between per capita gross national product (or other closely related concepts like

gross domestic product or national income[2]) and "broader" indexes of well-being such as environmentalists or egalitarians might prefer[3]. In the great majority of cases, a sustained rise in per capita real GNP will be accompanied by an improvement in the average family's standard of living[4].

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2. GNP is the market value of all final goods and services produced by factors (land, labor, and capital) owned by nationals of the country in question. GDP is the value produced by factors located within the country's boundaries. Before the recent nationalizations, GDP exceeded GNP by an appreciable margin in the Middle Eastern oil states, since a large fraction of the income generated within these states was paid as profits to the foreign owners of the oil facilities. National income measures the factor income paid to nationally owned factors of production, and therefore equals GNP minus depreciation and indirect taxes.

3. Wilfred Beckerman, In Defence of Economic Growth (London: Jonathan Cape, 1974), p. 85.

4. See, for example, Gary S. Fields, "Who Benefits from Economic Development? - A Reexamination of Brazilian Growth in the 1960's," American Economic Review 67 (September 1977): 570-82.

II. METHODOLOGICAL ISSUES

For a proper evaluation of the per capita GNP estimates presented in this paper, it is necessary to describe in some detail how they were derived. To obtain for several countries estimates for several years of per capita GNP expressed in constant dollars, two separate problems must be solved: in any one year, the levels of per capita dollar GNP in each country must be in the correct relation to each other (the problem of international comparisons); and within any one country, the growth of per capita real GNP over the period in question must be correctly measured (the problem of estimating national growth). These two issues will be considered in turn.

International Comparisons

As noted above, the standard method of estimating GNP in dollars involves taking a GNP estimate expressed in units of the national currency and converting that to dollars through the use of the official exchange rate. This method has been recognized as having some serious defects. First, there may be no single "official" exchange rate. In an attempt to achieve a balance-of-payments equilibrium, a government may create a system of widely ranging exchange rates, each one applying to a particular set of transactions. It is then far from obvious which rate should be used for national product conversions. For example, in Turkey the principal exchange rate applying to exports in 1957 was 2.80 liras per dollar; the principal rate for imports was 3.96 liras per dollar; and the official rate for tourists was 5.75 liras per dollar. Which of these rates should be used to convert into dollars the 1957 Turkish per capita GNP estimate of 1,208 liras?

Second, even if there is a single official rate (or a narrow band of rates), that rate may suddenly change as the result of a devaluation. Per capita dollar GNP after the devaluation looks much less impressive than before, and it is not clear which figure should be preferred. The official exchange rate for the Israeli pound in 1961, for example, was 1.8 pounds per dollar, and Israel's per capita GNP in 1961, estimated at 2,506 pounds, would at that exchange rate be equivalent to $1,322. In 1962 the national-currency estimate of per capita GNP rose to 2,885 pounds. But also in that year the exchange rate became 3 pounds per dollar. Converting the 1962 per capita GNP estimate into dollars at the new rate yields a figure

of only $962, which conveys a rather different impression about the relative standing of the Israeli economy.

Third, even if there is a single exchange rate which remains roughly constant for the entire period under review, that rate will reflect the relative prices of only a limited set of commodities at best. In Lebanon, for example, the exchange rate between the dollar and the Lebanese pound has generally been determined by market forces. As a result, the exchange rate -- about three pounds per dollar in most years of our period -- has reflected the relative prices of the goods traded between the U.S., Lebanon, and third parties (automobiles, cigarettes, etc.): a quantity of cigarettes costing one dollar in the U.S. would cost about three pounds in Lebanon, after allowance for transportation costs and local taxes. But the exchange rate does not reflect the relative prices of commodities not traded internationally. In Lebanon and in low-income countries generally, such commodities, like personal services, normally cost less in relation to internationally traded commodities than they do in the United States. Three pounds will go much further in buying haircuts or taxi rides in Lebanon than will one dollar in the United States. Hence using the rate of three pounds per dollar to convert Lebanese GNP from a pound figure to a dollar figure yields a definite understatement of Lebanese output or living standards.

What makes matters worse is that the official exchange rate often does not even reflect the relative prices of traded commodities. For various reasons, authorities have often maintained artificial exchange rates which are far removed from what market forces would produce. Such rates are obviously quite inappropriate for national product comparisons.

A proper comparison of the GNP in two countries clearly involves taking account of the relative prices of both traded and nontraded commodities. This is achieved in a method of comparison known as "repricing." To estimate Lebanese GNP as a fraction of U.S. GNP, the output volumes of both countries are valued at U.S. prices. (U.S. prices are used to obtain the value of Lebanese haircuts in dollars, etc.). The GNP ratio thus calculated is clearly sensitive to the particular set of prices employed. If Lebanese rather than U.S. prices were employed in valuing the output volumes of the two countries, a different GNP ratio would be obtained. The repricing method normally involves using first one price set and then the

other, and taking an average (conventionally the geometric mean) of the two GNP ratios.

By 1978 the repricing method, which involves the collection of detailed information on the prices and quantities of individual commodities, had been applied in 47 countries.[5] Only one of these, Iran, was in the Middle East.[6] But this does not mean that we are thrown back on the official exchange rate method for making estimates of Middle Eastern GNP in dollars. Two other methods of estimation exist, neither as good as the repricing method but both superior to official exchange rate conversion, and both of them have been used in the present study.

The first of these second-best methods relies on physical indicators. When data for several different countries are assembled, it has been noted that a high degree of correlation exists between (a) dollar GNP estimated by repricing and (b) various physical indicators such as cement production or the stock of radio receivers. For countries where no repricing study has been undertaken but where data on the physical indicators do exist, an estimate of GNP in dollars may therefore be obtained by assuming the same relationship between GNP and the indicators as prevails among the

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5. The repricing estimates for 43 of these countries are discussed in Irving B. Kravis, "A Survey of International Comparisons of Productivity," Economic Journal 86 (March 1976): 1-44. Estimates for the remaining four countries are discussed in Irving B. Kravis et al., "Real GDP Per Capita for More Than One Hundred Countries," Economic Journal 88 (June 1978): 215-42.

6. The derivation of the Iranian estimate is reported in detail in Irving B. Kravis et al., International Comparisons of Real Product and Purchasing Power (Baltimore: Johns Hopkins University Press, 1978). Two repricing estimates of per capita Iranian GNP in 1970 are given by Kravis et al., one based on the geometric mean method described above and the other using a specially constructed set of "international prices" to value output. The two estimates are respectively $1,089 and $1,263 (in dollars of 1976 purchasing power), both of which are significantly higher than my estimate of $723, discussed below. The estimates of the Kravis group are based on output quantities reported by the Bank Markazi, several of which seem exaggerated. To cite one example, it is difficult to believe that per capita construction of office buildings in Iran was as high as 70 per cent of the American level.

reference countries where repricing estimates of GNP are available.[7]

A study by the present author, using data for forty-one countries with repricing estimates of GNP, led to the conclusion that per capita dollar GNP could be estimated with an expected error of only 16 per cent on the basis of three indicators: energy consumption, the number of telephones in use, and daily newspaper circulation, all per capita.[8] (By contrast, the errors in estimating dollar GNP through official exchange rate conversion averaged 25 per cent.) The relationship between per capita dollar GNP and the indicators is shown by the following equation:[9]

$$\log X_1 = 1.668 + 0.251 \log X_2 + 0.191 \log X_3 + 0.198 \log X_4 \quad (1)$$

where

X_1 is per capita GNP estimated by repricing method (US dollars of 1976 purchasing power)

X_2 is energy consumption per capita (kg of coal equivalent)

X_3 is telephones per capita (x 1,000)

X_4 is daily newspaper circulation per capita (x 1,000).

This equation was used to obtain a benchmark estimate of per capita dollar GNP in sixteen of the twenty-three Middle Eastern countries. The benchmark estimates were in general made for the year 1961, which was halfway through the period under study.

The remaining seven countries were handled differently. These were the oil states with small populations -- Bahrein, Kuwait, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. Each of these states experienced extremely rapid growth in several years of the period, like the 30 per cent

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7. For the original development of this estimation technique, see Wilfred Beckerman and Robert Bacon, "International Comparisons of Income Levels: A Suggested New Measure," Economic Journal 76 (September 1966): 519-36.

8. Robin Barlow, "A Test of Alternative Methods of Making GNP Comparisons," Economic Journal 87 (September 1977): 450-59.

9. Among the 41 reference countries, 37 possessed data on all three indicators. Equation (1) was estimated by ordinary least squares from data for these 37 cases, and yielded an R^2 of 0.97 (i.e. the equation explained 97 per cent of the variance in $\log X_1$).

increase in per capita real GNP reportedly achieved by Libya in 1963. When growth is this rapid, the physical-indicator method does not seem to provide a very good estimate of GNP, since normally the indicators do not change much from year to year and an estimate based on them tends to fall below the fast rising level of actual GNP. Accordingly another second-best method of estimating per capita dollar GNP was used for these cases, different from the physical-indicator approach. This further method involves taking a GNP estimate expressed in units of the national currency, converting that to dollars with the official exchange rate, and then applying a correction factor to offset the downward bias inherent in official exchange rate conversion. Tests which the present author has performed with forty-one countries for which repricing estimates of dollar GNP are available suggest that this method is about as good as the physical indicator method in approximating the repricing figure.[10] The correction factor derived from that analysis is contained in the following equation:[11]

$$\log X_1 = 0.413 + 0.901 \log X_5 \qquad (2)$$

where X_5 is per capita GNP estimated by converting a national currency estimate into dollars at the official exchange rate (in US dollars of 1976 purchasing power). Among the seven oil states in question, national currency estimates of GNP were available for Kuwait, Libya, and Saudi Arabia, and Equation (2) could therefore be used to establish benchmark estimates of per capita dollar GNP in those three cases.

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10. Barlow, loc. cit., p. 455.

11. Equation (2) was estimated from data for 38 of the 41 reference countries and yielded an R^2 of 0.94.

For the remaining four oil states, Bahrein, Oman, Qatar, and the United Arab Emirates, all of which are in the area of the Arabian Peninsula, no estimates of GNP in national currencies were available, and Equation (2) therefore cannot be used directly. Dollar GNP may nonetheless be estimated for these four cases if it is recognized that economic growth in all of them has been closely tied to their oil sectors, as is also true for the other Arabian oil states, Kuwait and Saudi Arabia. In all six cases, there is a common pattern of evolution, starting with a primitive, subsistence economy based largely on pastoralism and fishing, followed by the opening up of the oilfields, and the subsequent use of rising oil revenues to build up local industrial sectors (usually petrochemical in nature), social infrastructure (schools, hospitals, roads, etc.) and military forces. It can be presumed therefore that there is in these countries a close relationship between constant-dollar GNP and some readily available indicator of oil activity like government oil revenues or the volume of crude oil production. This relationship can be measured for Kuwait and Saudi Arabia, since for these two countries there is a benchmark estimate of dollar GNP, based on Equation (2), and in addition for Saudi Arabia there is a series of real GNP estimates expressed in the national currency. The basic similarity between the economies of Kuwait and Saudi Arabia on the one hand and those of Bahrein, Oman, Qatar, and the United Arab Emirates on the other then makes it legitimate to assume that the relationship between oil and dollar GNP observed in the former two countries applies also in the latter four.

Accordingly, the following equation, based on Kuwaiti and Saudi data, was used for estimating dollar GNP in Bahrein, Oman, Qatar and the Emirates:

$$X_1 = 500 + 7.66\ X_6 \qquad (3)$$

where X_6 is per capita national oil output (in barrels).[12]

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12. National oil output is government oil revenues divided by the posted price of crude oil (Arabian Light f.o.b. Ras Tanura). This particular indicator of oil activity was chosen as being appropriate for estimating the growth of real GNP over time, since it reflects changes in output volume and in profit shares between government and concessionaire (changes which affect real GNP) but does not reflect changes in oil prices or terms of trade (changes which do not affect real GNP). One might note as an aside that a measure of real product which did reflect changes in the terms of trade (the ratio of an export price index to an import price index) would be superior to real GNP for estimating changes in welfare over time, but such measures are not generally available for Middle Eastern countries before 1960. One of the few examples is the series on "real gross national income" estimated by Mead for Egypt (Donald C. Mead, Growth and Structural Change in the Egyptian Economy). The intercept and slope of Equation (3) were determined from the following conditions:

a) the per capita dollar GNP of Kuwait in 1970 would be the same under both Equations (2) and (3);

b) subject to that, Equation (3) would minimize the unexplained variance in the ten estimates of per capita dollar GNP in Saudi Arabia (1963-72) which were obtained by linking the constant-price national-currency GNP series to the benchmark estimate of dollar GNP derived from Equation (2).

The resulting equation explains 84 per cent of the variance in the ten Saudi estimates, all of which were much smaller than the single Kuwaiti estimate. Data on oil revenue and prices were obtained from O.P.E.C., Annual Statistical Bulletin, 1973.

A Comparison of Comparisons

It is reasonable to ask how the dollar GNP estimates obtained by the above methods compare with the estimates yielded by the standard method of official exchange rate conversion. In Table 1 the countries of the Middle East are ranked by their 1970 per capita dollar GNP as estimated by the physical-indicator method and the other special methods linked to repricing. This per capita GNP figure is shown in Column 1 of the table. In Column 4 is shown per capita dollar GNP as estimated by official exchange rate conversion. The two estimates are compared -- in the form of the ratio between them -- in Column 5.

Three main points emerge from an examination of Column 5. First, for some countries no estimate of per capita dollar GNP can be made with the method of official exchange rate conversion, because no estimate of GNP in the national currency has been published. The data requirements of the repricing-linked methods are much more modest, and so all countries of the region can be covered by those methods. Second, in those countries where per capita dollar GNP can be estimated both by repricing-linked methods and by official exchange rate conversion, the estimate based on the former methods is always higher than that based on the latter. The main reason for this, as suggested above in our discussion of Lebanese exchange rates, is that the prices of nontraded commodities relative to the prices of traded commodities tend to be lower in low-income countries than in high-income countries like the United States. This phenomenon, which in turn is probably caused by the relative abundance of the relevant factors of production in the two types of economy, is recognized by the repricing approach but ignored by official exchange rate conversion.

Third, the ratio between the two GNP estimates varies widely from country to country. For some countries, like Israel and Libya, the two estimates are quite close together. For others, the repricing-linked methods produce estimates far above those yielded by official exchange rate conversion. In seven of the countries, per capita dollar GNP estimated by repricing-linked methods is

TABLE 1

ALTERNATIVE ESTIMATES OF PER CAPITA DOLLAR GNP
IN MIDDLE EASTERN COUNTRIES, 1970

	Per capita GNP estimated by repricing-linked methods (current $)[1] (1)	Per capita GNP in current-price units of national currency[2] (2)	Annual average official exchange rate (units of national currency per $)[2] (3)	Per capita GNP estimated by official exchange rate conversion (current $)[3] (4)	Col. 1 as percentage of Col. 4 (5)
1. Qatar	$5,005	*	*	*	*
2. Kuwait	3,719	1,212 dinars	.3571	$3,394	110%
3. U.A.E.	3,485	*	*	*	*
4. Israel[4]	1,931	6,672 pounds	3.500	1,906	101
5. Libya	1,745	573.7 dinars	.3571	1,607	109
6. Cyprus	1,337	367.5 pounds	.4167	882	152
7. Saudi Arabia	1,197	3,572 rials	4.500	794	151
8. Lebanon	999	1,709 pounds	3.269	553	181
9. Bahrein	656	*	*	*	*
10. Oman	619	131.8 riyals	.4167	316	196
11. Turkey	588	3,982 liras	13.20	302	195
12. Jordan[5]	540	97.63 dinars	.3571	273	198
13. Iran	500	27,851 rials	75.75	368	136
14. Egypt	462	90.21 pounds	.4348	207	223
15. Iraq	457	119.8 dinars	.3571	335	136
16. Syria	450	1,042 pounds	4.310	242	186
17. Algeria	409	1,612 dinars	4.937	327	125
18. Morocco	398	1,126 dirhams	4.963	227	175
19. Tunisia	377	141.6 dinars	.5249	270	140
20. South Yemen	193	41.11 dinars[6]	.4167	99	195
21. Sudan	143	38.00 pounds	.3482	109	137
22. Afghanistan	107	4,511 afghanis	81.90	55	195
23. North Yemen	87	478.9 rials[6]	5.500	76	114

1. Source: Appendix below, with estimates expressed in dollars of 1970 purchasing power.
2. Sources: for North Yemen and South Yemen, U.N., Yearbook of National Accounts Statistics; for other countries, World Bank, World Tables, 1976.
3. Col. 2 ÷ Col. 3.
4. Excluding occupied territories.
5. Including West Bank.
6. Per capita gross domestic product.

roughly twice as high as the levels conventionally reported.[13] This means that in many instances, the relative standings of two given countries are much altered if a different method of estimating dollar GNP is used. To cite one comparison which is often made in military and journalistic analyses, Egyptian GNP in 1970 appears to be only about 24 per cent larger than Israeli GNP when the method of official exchange rate conversion is used.[14] But repricing-linked methods suggest that the Egyptian GNP was nearly three times as large as the Israeli. As indicated above, the repricing-linked methods are not always accurate, but their average error is significantly less than what official exchange rate conversion is subject to.

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[13] Discrepancies of this magnitude or even larger have been found for some countries outside the Middle East where full-blown repricing studies have been conducted. The ratio between the level of per capita dollar GNP determined by such studies and the level resulting from official exchange rate conversion is 250 per cent for Colombia and 335 per cent for India. See Kravis et al., International Comparisons, p. 10.

[14] See, for example, Time (January 10, 1977), p. 50: "The foreign money entering Israel spurred growth that has given Israel a G.N.P. only a shade smaller than that of Egype, though its population, at 3.3 million, is less than a tenth the size."

Estimating National Growth

Benchmark estimates of per capita dollar GNP having been obtained, it remained to estimate the annual rate of growth in each country's per capita real GNP both before and after the benchmark year. For Bahrein, Kuwait, Oman, Qatar, and the United Arab Emirates, this was an easy task: Equation (3), relating GNP to oil output, was used to estimate per capita dollar GNP in all years of the period.[15]

For the other eighteen countries of the region, estimates of the annual rate of growth in real GNP were in general taken from published sources. These sources were usually official in nature, such as governmental yearbooks or reports to the United Nations, but in some cases estimates by private authors were used instead. (References are given in the appendix to this paper). For ten countries, the published sources provided real GNP estimates for all twenty-three years of the period under study: Afghanistan, Algeria, Cyprus, Egypt, Iran, Israel, Morocco, Syria, Tunisia, and Turkey.

For the eight remaining countries, there were gaps in the published sources, and these were filled by techniques of estimation based on a variety of indicators. In four of the countries, two of the physical indicators appearing in Equation (1) -- energy consumption and telephones -- were used to fill in gaps of varying length.[16] For Iraq, estimates for three years out of the twenty-three year period were made in this way, and similarly for Jordan (nine), Lebanon (fourteen) and

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15. Except for the pre-oil years in Oman and the Emirates, when other estimation methods described in the appendix below were used.

16. Equation (1) itself could not be used in these cases, since for the years and countries in question there were no data on newspaper circulation. When there was information on both energy consumption and telephones, the following equation was used:

$$\log X_1 = 1.807 + 0.290 \log X_2 + 0.294 \log X_3 \qquad (4)$$

When nothing more than telephone data was available, the following was used:

$$\log X_1 = 2.544 + 0.552 \log X_3 \qquad (5)$$

Equations (4) and (5) were each estimated from data for 37 of the 41 reference countries mentioned above. R^2 was 0.96 in (4) and 0.92 in (5).

Sudan (four).

In the cases of Libya and Saudi Arabia, the gaps in the real GNP series were not filled by using indicators from Equation (1), because as noted above the indicators in question do not give good estimates of dollar GNP when growth is very rapid. The gaps for Libya, occurring in ten years of the pre-oil period, were filled from Equation (2).[17] For Saudi Arabia, estimates for the thirteen missing years were derived from Equation (3).

In South Yemen, the bulk of output beyond the subsistence level was generated by the British military presence, entrepôt trade and the servicing of shipping in Aden, and the oil refinery. Available indicators of these activities are crude oil imports and vessel tonnage entering Aden, and these have been used for estimating GNP.

For North Yemen, finally, there is an acute shortage of helpful statistics. The benchmark estimate for 1970, based on energy consumption, telephones, and newspapers, has been assumed to apply to the whole of the period under study. Accounts of the North Yemen economy suggest that there may have been some ups and downs during this period, but no pronounced trend away from its historic state of low-level stagnation.

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17. In general, Equation (2) is not suitable for estimating the rate of growth in real GNP, since the current-price national-currency estimates of GNP used in the equation reflect terms-of-trade changes, which are irrelevant for measuring changes in real GNP. However it does not seem likely that the results for Libya during the pre-oil years in question are seriously biased.

III. BASIC RESULTS

The estimates of per capita dollar GNP obtained by the above methods for the individual countries of the Middle East are shown on a semi-logarithmic scale in Figure 1.[18] For the purpose of graphical presentation, the countries are divided into five groups. The per capita GNP estimates appearing in Figure 1 are also enumerated in the appendix below, along with the population estimates employed, and more details on the methods and sources used. It goes without saying that the estimates are of widely varying reliability. Many should be regarded as highly tentative, but are probably adequate as establishing rough orders of magnitude.

The last part of Figure 1 shows the growth in per capita dollar GNP for all Middle Eastern countries combined.[19] For purposes of comparison the growth in the United States' per capita GNP during the same period is also included. It is obvious that growth was faster among those Middle Eastern countries which were important exporters of oil than among the remainder, and so growth curves for these two groups of countries are also shown. The per capita real GNP of the oil states grew half again as fast as that of the non-oil states between 1950 and 1972. It is nonetheless of interest that even the non-oil states, considered as a group, grew faster than the United States during this period.

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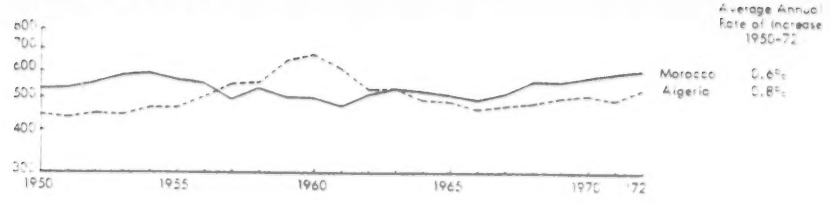
18. With a semi-logarithmic scale, a steepening (flattening) of the growth curve from one year to the next indicates an increase (decrease) in the percentage rate of growth.

19. For the purpose of these regional estimates of per capita GNP, the Middle East is defined as the twenty-three countries whose growth curves are shown in Figure 1, plus Gaza. As indicated in the appendix below, per capita GNP in Gaza in 1966 (expressed in Jordanian dinars) was estimated to be 23.2 percent of per capita GNP in Jordan. In making the regional per capita GNP estimates, the same ratio between per capita GNP in Gaza and in Jordan is assumed to prevail in all other years of the period between 1950 and 1972.

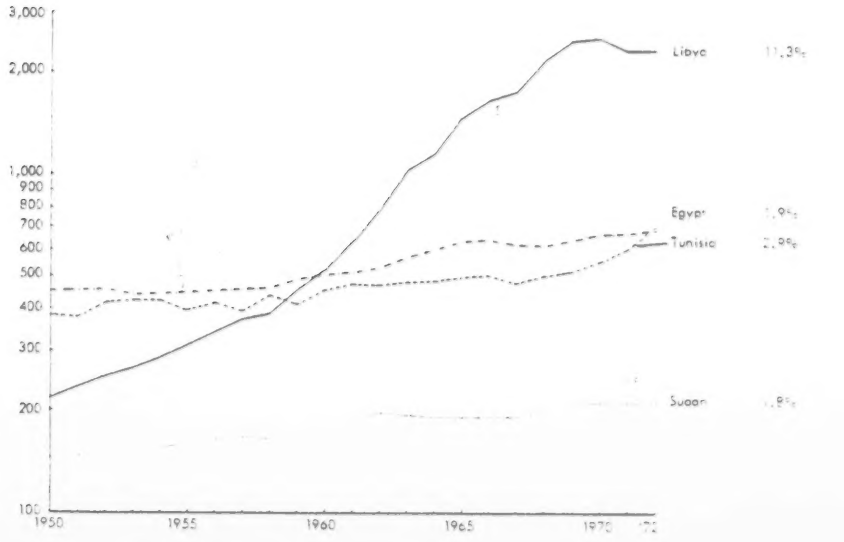
Figure 1

PER CAPITA DOLLAR GNP IN THE MIDDLE EAST
1950-1972

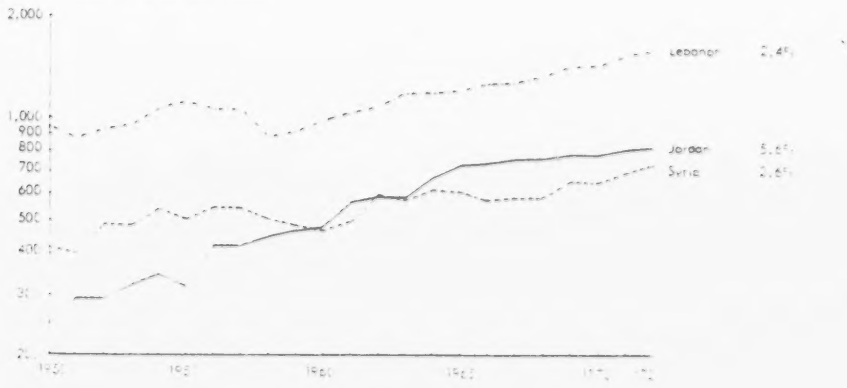
a. Morocco and Algeria



b. Other North African Countries



c. Lebanon, Syria, and Jordan



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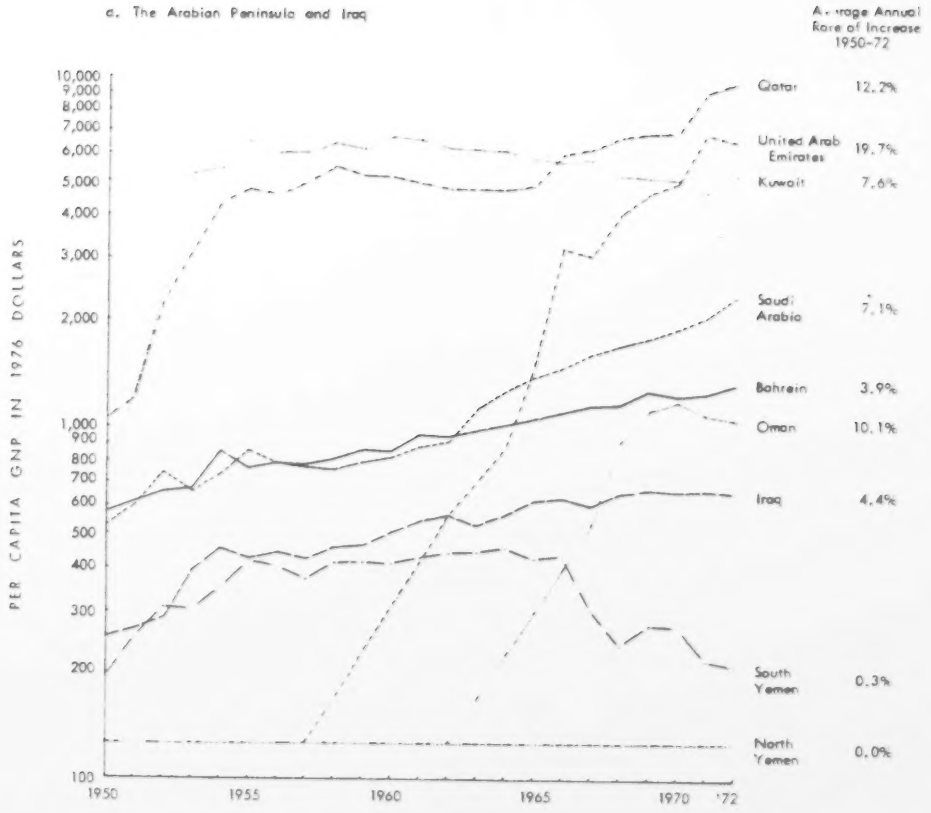
a. The Arabian Peninsula and Iraq



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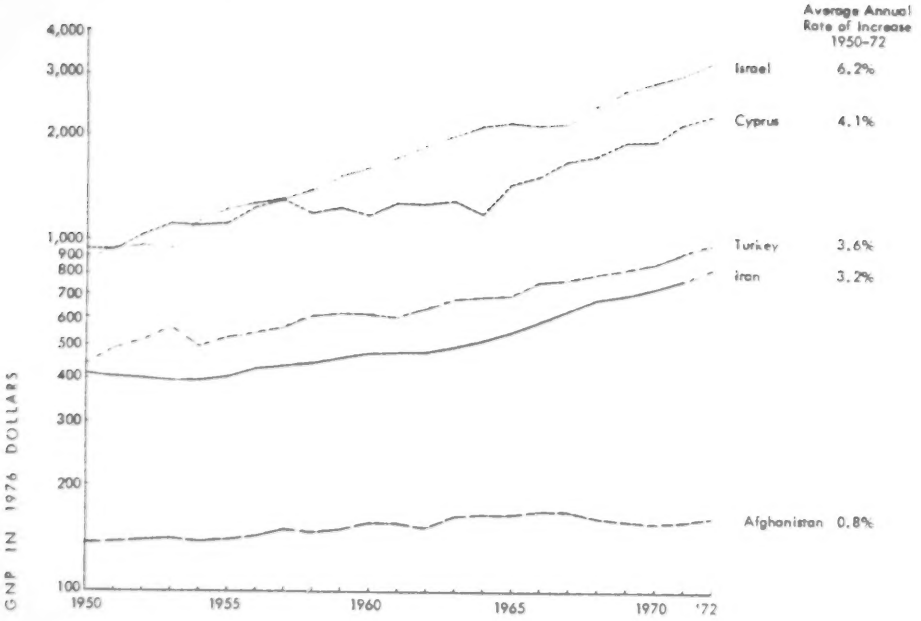
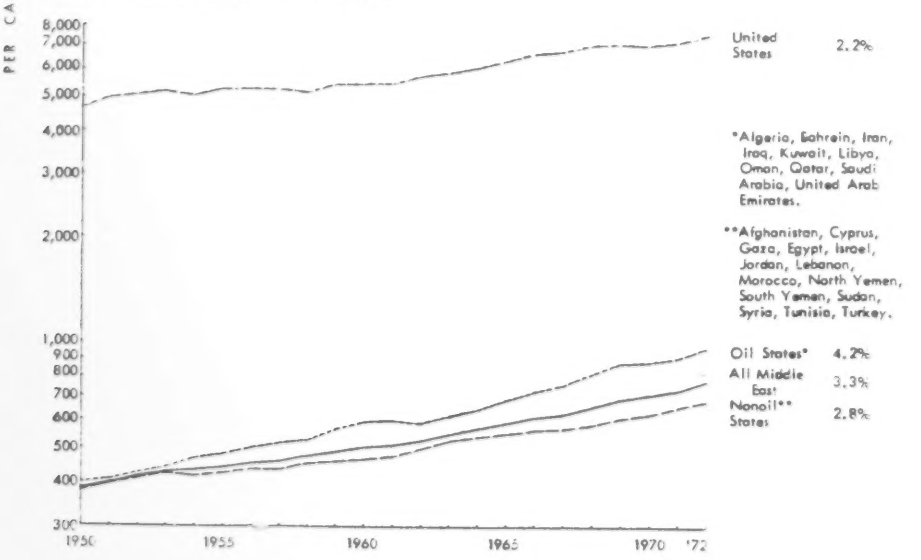
e. Non-Arab States



f. The Middle East and the United States



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IV. SOME FACTORS EXPLAINING ECONOMIC GROWTH

We offer finally some explanations for the accelerations and decelerations of economic growth which are apparent in Figure 1. The objective here is not to give an exhaustive explanation of each country's growth experience, but only to touch on a few of the more salient features. Taking the countries in the order in which they appear in Figure 1, we note first that the growth curves for Morocco and Algeria have some important similarities, reflecting their common experience of decolonization. Initially, during the last years of colonial rule, there was in both countries an appreciable rise in per capita product. In part this was due to an increase in military expenditures, as the French authorities attempted to suppress the national independence movements, and this fact should serve to remind us that an increase in per capita GNP does not necessarily imply an improvement in average living standards.

The attainment of independence, occurring in 1956 in Morocco and in 1962 in Algeria, was followed by a significant decline in per capita GNP. Both economies had become thoroughly permeated by French resources -- of capital, management and even labor -- and the exodus of the settlers following independence caused widespread disruptions. In agriculture, for example, French-owned landholdings which had been farmed as large-scale, mechanized units were in many cases subdivided among peasant cultivators, and output suffered as a result, at least for a time. In Morocco the problems caused by the exodus were compounded by droughts in 1957 and 1961. But the economic decline was more severe in Algeria, per capita GNP falling 31 per cent from its peak in 1960 to its post-independence trough in 1966. This drastic decline reflected the greater role which the French community had played in Algeria (in comparison with the Moroccan situation), and was also attributable in part to the failures of many of the socialist experiments which the new Algerian governments introduced. (It is also true in both countries that the decline in per capita income for the indigenous inhabitants was less than that for the population as a whole, since the income of the departing settlers had been relatively high.)

Eventually, towards the end of our period, both countries experienced

a resumption of growth. In Morocco the agricultural sector expanded significantly, in part due to the completion of large-scale irrigation schemes, and tourism also flourished. In Algeria, the oil sector seems to have been the major pôle de croissance. The recovery in both countries, however, was retarded by the high rates of population growth prevailing. The Moroccan and Algerian birth rates remained at high levels, as was true in most Middle Eastern countries, and this created serious burdens of economic dependency.

Decolonization also shaped the course of economic growth in Tunisia. The attainment of independence in 1956 was followed by the exodus of most of the French and Italian settlers, who had played key roles in the Tunisian economy as administrators, businessmen, and technicians. Their departure caused many dislocations, and output suffered. At the same time, the political uncertainties following independence had a negative effect on investment: the capital stock grew at a slower rate, and the stagnation of output was prolonged. These problems were aggravated by periodic bad harvests, to which Tunisia with its uncertain rainfall is particularly prone. Significant declines in output occurred for this reason in 1955, 1957, and 1959, as well as later in 1967.

The negative effects of decolonization on output were somewhat cushioned by the programs of Destourian Socialism introduced after 1960. There was a rapid expansion of the public sector, and many of the workers left unemployed by the European exodus were absorbed into government service. At the same time, substantial foreign aid from the United States helped to restore the rate of fixed investment, which averaged over 20 per cent of gross national product between 1960 and 1967. This doubtless was part of the reason for the acceleration of growth which started in 1968. Agriculture emerged from a long stagnation, by some accounts because of the policies of décollectivisation adopted. Tourism also made a major contribution to the Tunisian takeoff, and a further impetus was provided by the exploitation of the offshore oilfields.

The oil boom arrived earlier and on a much larger scale in Libya, with the result that by 1972 per capita GNP in Libya was higher than in any other country of Africa. Oil revenues in significant amounts were first received by the Libyan government in 1962. Thereafter growth was

very rapid, as the oil companies were quick to exploit Libya's geographical advantage in relation to the European markets. This advantage over the Persian Gulf producers became even more pronounced after the closing of the Suez Canal in 1967, and in 1968 the volume of Libyan crude oil production was 73 per cent higher than the 1966 level. Oil production reached a peak in 1970, after which the new Qaddafi regime forced the oil companies to curtail their output, as part of its campaign aimed at higher prices and higher taxation.

Rapid growth had occurred in Libya during the 1950's, before the era of large-scale oil production. The economy started that decade in a very primitive condition, not unlike that of the Arabian Peninsula states in their pre-oil stage. An expansion then occurred in the American and British military bases, generating increases in local income. Further increases occurred as the oil companies started exploration in the late 1950's.

In Egypt, three phases of growth may be discerned in the period under study. First, the early years of the Nasser regime, established by coup d'état in 1952, saw a general stagnation. Agricultural output failed to expand, partly because the land reforms immediately instituted by the new regime inevitably led to some temporary dislocations. Several public services were curtailed, as the government adhered for a time to the principles of "sound finance," attempting to avoid the large deficits which had characterized the last years of the Farouk era. The Suez Canal was closed for several months after the Anglo-French-Israeli invasion of 1956, and further losses of output resulted.

In 1958 the economy entered a phase of positive growth which lasted until 1965. It was the public sector, under the banner of "Arab Socialism", that was responsible for the expansion. New industrial enterprises were established under public management. A military buildup took place and social welfare programs expanded. The reopened Suez Canal handled an ever-increasing volume of oil traffic from the Persian Gulf. During this phase, foreign aid was received on a large scale from both the United States and the Soviet Union, with favorable effects on the rate of economic growth.

But during the last part of our period, the activist foreign policy pursued by the Nasser régime led to some serious economic problems. Egypt's intervention in the Yemen civil war proved to be very costly. The swift rise in military expenditures precipitated a foreign exchange crisis, and the resulting curtailment of imports caused many production cutbacks in the civilian sector. Even more catastrophic for the Egyptian economy was the 1967 war with Israel. The Canal was again closed, the tourist business collapsed, the Suez oil refinery was destroyed, and the Sinai oil wells fell into Israeli hands. The losses of output which all this involved were compounded as morale sank and inefficiencies multiplied in the public sector, which by this time encompassed the great bulk of economic activity. Thus Egypt's experience between 1950 and 1972 provides several illustrations of how political miscalculations can retard economic development.

The economy of the Sudan also made relatively little progress during this period. There are severe geographical obstacles to Sudanese growth. The population centers are widely distant from each other and from the Red Sea ports, with the result that production for internal markets and for export faces unusually high costs of transportation. No gratuitous developments took place to alleviate these problems, developments of the kind that benefited many Middle Eastern countries during the period in question. No oil was discovered, and no massive financial aid was forthcoming from either the U.S. or the U.S.S.R., neither of whom regarded the Sudan as being in a politically critical zone. To make matters worse, a bitter civil war raged between North and South in most years of the period, with deleterious economic consequences.

In the case of Lebanon too, no oil was discovered and no large-scale aid was received. (And after the end of our period there was a bitter civil war which caused economic ruin). Nevertheless, the Lebanese economy grew at a considerable rate, apart from some setbacks in the late 1950's. The Suez crisis of 1956 and the civil unrest of 1958 caused temporary declines in output from several sectors -- tourism, for example. But subsequently, between 1958 and 1972, per capita real GNP grew at an average annual rate of 4.3 per cent. The relatively high level and the

relatively rapid growth of Lebanese income was mainly attributable to the success of various sectors providing services to the outside world: international banking, currency exchange, entrepôt trade, airline traffic, the narcotics business, and tourism. These activities flourished in the laissez-faire atmosphere of Lebanon, where the government applied only minimal levels of regulation and taxation.

The Lebanese economy is highly vulnerable to outside forces, but between 1950 and 1972 the positive forces generally outweighed the negative. The Arab-Israeli wars of 1956 and 1967, for example, both caused losses of tourist business for Lebanon, but the closing of the Suez Canal also occurring in both instances was of indirect benefit to Beirut, which was able to serve as an alternative port for countries of the hinterland, particularly Jordan and Iraq. The creation of an autarkic police state in neighboring Syria, along with the Syrian drought of 1958-61, caused losses for Lebanon in income from tourism and trade. But these same political developments also led to an exodus of businessmen and private capital from Damascus, and Beirut was one of the beneficiaries. Capitalistic Beirut also benefited from similar flights of capital and personnel away from socialist regimes in Egypt and Iraq. Above all, the oil boom in the Persian Gulf region brought prosperity to Lebanon in a variety of ways. Income was derived from the passage of Iraqi and Saudi oil through pipelines terminating at Lebanese ports. The oil towns of the Gulf provided a growing market for Lebanese fruits and vegetables. The Gulf sheikhs invested heavily in Beiruti real estate and became major clients of the Lebanese banking and tourist industries.

The flight of capital and capitalists from Syria is undoubtedly a major explanation for the lengthy stagnation apparent in that economy during the middle part of the period under review. Between 1957, when leftist forces started to gain control, and 1968, per capita real GNP grew at an average annual rate of only 0.8 per cent. Before 1957, there had been a substantial investment of private capital in large-scale farming ventures in the eastern part of the country, and agricultural output rose impressively. Even in that period, however, there were setbacks due to bad weather, such as in 1955, and the serious drought of

1958-61 added to the problems which had to be faced during the early stages of Syrian socialism.

Another reason for the prolonged stagnation in Syria was that the socialist governments, having taken over from the private sector the task of capital formation, spent relatively little on capital projects with a quick payoff. Much was spent on the armed forces and on long-payoff infrastructure projects, like the Euphrates Dam and the railroads linking the port of Latakia to the interior. By the late 1960's some of these projects were starting to produce results, and the growth rate of the GNP improved. A further stimulus was provided by the exploitation of the north-eastern oilfields.

Throughout the whole period, it should be added, Syrian development was seriously retarded by high fertility. The successive governments followed strong pronatalist policies, and in many years the crude birth rate in Syria, hovering around 47 per thousand, was the highest in the entire Middle East.

Jordan achieved a rapid growth rate during the period under study, second only to Israel among the non-oil states of the Middle East. In fact between 1950 and 1967 -- in the latter year Jordan lost so much of its territory and resources to Israeli control that its economy became radically altered -- the Jordanian growth rate exceeded the Israeli. The Jordanian expansion during those years was fairly well diversified. Irrigation projects like the East Ghor canal increased agricultural output; phosphate mining became well established; many manufacturing plants were created; there was a boom in tourism based on the religious sites in Jerusalem, Bethelehem and elsewhere. The explanations for the rapid growth are not hard to find. There was an immense capital inflow, in some years exceeding one-fifth of the national product, the main sources being the governments of the United States, Britain, and Kuwait, as well as the United Nations. And the Palestinian communities living in Jordan provided an abundant source of merchants, managers, and skilled workers.

After the Arab-Israeli war of 1967, the West Bank passed under Israeli control, and Jordan thereby lost about 40 percent of both its population and output. Israeli authorities permitted some commerce to continue between West and East Banks, but as time went on the West Bank became more closely

tied to the Israeli economy and less closely tied to what was left of Jordan. Available statistics do not permit good estimates of the real growth occurring in West and East Banks separately after 1967.[20] It seems clear, though, that the strife between Palestinian guerrillas and Jordanian authorities in 1970 caused a definite interruption in economic growth on the East Bank.

The next group of countries to be considered are those in the Arabian Peninsula along with Iraq (Figure 1.d). Of the nine countries involved, all except two (North Yemen and South Yemen) had become important exporters of oil by the end of the period under study, and their economic growth during this period was largely conditioned by the rate of extraction of their oil deposits. The largest of the seven oil states in terms of population -- and the one with the most extensively developed non-oil sector -- was Iraq. At the start of the period, Iraq experienced spectacular growth, per capita real GNP rising by 180 per cent between 1950 and 1954. The oil sector was largely responsible for this leap forward: the Iraqi government secured more favorable profit-sharing arrangements with the oil companies, and the production of Iraqi crude expanded greatly to fill much of the gap left by the temporary closure of the Iranian oilfields. But the high rates of increase in Iraqi oil revenues were not sustained. For the remaining years of the Hashemite monarchy, overthrown in 1958, there was little economic growth. Agriculture stagnated, in part because of an oppressive land tenure system. The government's development projects had little short-run payoff, consisting predominantly of large-scale dams and roads. The Suez crisis lowered oil revenues, as the Canal was closed and pipelines sabotaged.

Growth resumed during the first years of the socialist phase in Iraq, which began with the Kassem regime in 1958 and continued with a succession of Baathist governments after 1963. Again, the oil sector provided the main impetus, the volume of crude oil output rising by 90

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20. The growth rates of Jordanian per capita real GNP shown for 1967-72 in Figure 1 are estimated from physical indicators (per capita energy consumption and telephones) which apply to West and East Banks combined.

per cent between 1958 and 1966. After 1966, however, real per capita GNP stagnated. Oil output failed to increase appreciably. In 1967 the flow of oil was interrupted by the Arab-Israeli war, and in other years of the period, an ongoing struggle between the radical regimes in Baghdad and the Western-owned Iraq Petroleum Company had the effect of depressing output. Outside the oil sector, private lands and businesses continued to be expropriated, and were then reorganized under the auspices of an overextended bureaucracy. This process also seemed to cause losses of output, at least in the short run. And the long armed struggle against the Kurdish minority involved additional heavy costs.

Four states of the Arabian Peninsula -- Bahrein, Kuwait, Qatar and Saudi Arabia -- were important exporters of crude oil during the entire period from 1950 to 1972. Virtually all of their economic growth during these years is attributable directly or indirectly to their oil sectors, and their growth curves shown in Figure 1.d are mostly derived from Equation (3), which estimates real per capita GNP solely on the basis of oil activity.[21] The factors explaining the pattern of growth in real per capita GNP in these four states can be summarized as follows:

a) There was a very large increase in the volume of oil output in all cases, the volume more than doubling in Bahrein between 1950 and 1972, increasing about tenfold in Kuwait and Saudi Arabia, and about fifteenfold in Qatar. The increases in percentage terms were particularly rapid during the Iranian nationalization crisis of 1951-54, when the Arab producers took over much of Iran's share of the world export market. The increases were below normal in the aftermath of the Arab-Israeli wars of 1956 and 1967.

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21. It should be noted that the level of real per capita GNP in Saudi Arabia, quite apart from its rate of increase, is highly uncertain. This is because there is much disagreement about the size of the population. The Saudi government claims a 1972 population in excess of six million, but some observers think that the real figure is only about half as large as that. In this paper one of the smaller estimates of the Saudi population has been used.

b) A further reason for the rapid increases in real GNP during the early 'fifties was the rising share in oil profits obtained by all four governments, following the "50:50" agreement negotiated between Saudi Arabia and Aramco in 1950. This formula then remained largely unchanged for the next twenty years. In 1971 and 1972, the governments secured markedly higher fractions of the oil profits, as the terms of the Libyan agreement of 1970 were extended to other countries of the region.[22]

c) In Kuwait and Qatar, the population grew rapidly because of immigration. Between 1950 and 1972, the annual rate of population growth averaged about 10 per cent in Kuwait, and about 6 per cent in Qatar. As a result, per capita GNP declined in some periods even though GNP itself was increasing quite substantially.

The other two Arabian oil states, Oman and the United Arab Emirates, started oil production in the 'sixties. Real per capita GNP rose meteorically in these cases, as within a very few years the main economic activity changed from primitive pastoralism to large-scale oil extraction.

By contrast, the remaining states of the Arabian Peninsula, South Yemen and North Yemen, ended the period with very low levels of real per capita GNP. The economy of South Yemen has consisted essentially of two parts: modern activities in the port of Aden (shipping services, oil refining, and until 1967, a British military base) and traditional activities in the hinterland (subsistence agriculture and pastoralism). The economy has experienced some major changes in real per capita GNP since 1950, and these have mostly been due to various developments in the modern sector. In the general absence of national accounts, the real per capita GNP series shown in Figure 1.d is based on two indicators -- crude oil imports and vessel tonnage entering Aden. The series is therfore only a rough approximation of the truth, but probably captures fairly well the main expansions and contractions of the economy. The

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22. Also in these years the posted price of crude oil started to rise significantly, after more than twenty years of stability. But as noted above, this development, involving changes in the terms of trade, has no effect on real GNP as conventionally defined.

period from 1950 to 1955 saw a definite expansion, as the volume of tanker traffic to and from the Persian Gulf increased, much of it stopping at Aden. Also, the oil refinery started operations in 1954. There was then a phase of stagnation, lasting from 1956 to 1966. The closing of the Suez Canal in 1956 and 1957 caused some income losses for Aden in those years, and increasingly frequent strikes by trade unions in the port caused further interruptions. In 1957 a major economic decline started. The Suez Canal was once again closed, this time for a much longer period, and international shipping was re-routed away from the Red Sea and Aden. The British military forces withdrew, and those Adenis who had provided them with goods and services became unemployed. The colonial authorities were replaced by régimes that were Marxist and xenophobic, and the members of the European, Indian, and Pakistani business communities quickly departed, causing further losses.

As noted earlier, there are no quantitative indicators available for estimating the growth of real per capita GNP in North Yemen since 1950. The only published series covering the whole period is one on coffee production. For what it is worth, this series indicates stagnation, but the coffee sector is only a small part of the Yemeni economy. Stagnation nonetheless appears to be a fairly accurate description of the economy as a whole. Some new technology was introduced into Yemen during the 1960's, largely from Egyptian, Soviet, and Chinese sources, but the economic gains from that process were probably offset by the prolonged civil war waged during those same years.[23]

The last group of countries, those shown in Figure 1.e, are the five non-Arab states of the Middle East. Among these, real per capita GNP grew fastest and reached its highest level in Israel. Two factors account for most of Israel's economic success: the existence of a highly trained and highly motivated labor force, much of it of European origin, and an

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23. One development which was to add significantly to Yemeni incomes started near the end of our period -- the large-scale emigration of Yemeni workers to the oilfields of the Arabian Peninsula. The remittances which emigrants send back to their families are not conventionally counted as part of their native country's GNP, though these payments are counted as part of that country's "national disposable income."

immense inflow of capital. This inflow came from a variety of sources -- economic and military aid from the U.S. government, donations and loans from the worldwide Jewish community, and governmental reparations and individual restitution payments from West Germany -- and in some years exceeded one-fifth of the Israeli GNP. The combination of skilled immigrants and large external subsidies worked almost as well in Israel as it did in Jordan, to judge by per capita GNP growth rates.

The Israeli expansion was interrupted by two recessions, occurring in 1952-53 and 1966-67. Both of these were basically caused by contractionary policies instituted by government. The Israeli economy has suffered from chronic inflation and accompanying balance-of-payments problems, and on these two occasions the government attempted to remedy the situation by raising taxes, reducing budgetary expenditures, and tightening import restrictions. Unemployment resulted, reaching in 1967 a level of 12 per cent of the labor force, until the June war of that year triggered an increase in military expenditures and a resumption of economic growth.

The economy of Cyprus expanded markedly between 1950 and 1972, despite serious political disturbances. Three phases of growth can be distinguished. Between 1950 and 1957 there was a rapid expansion. World copper prices rose, stimulating additional output from the island's mines. There was also a buildup of British military forces during these years, creating many employment opportunities. Then between 1958 and 1964 the economy stalled. Political factors were mostly responsible -- the disruptive campaign of terrorism waged against the colonial authorities, and the strife between the Greek and Turkish communities which intensified after independence, culminating in open warfare in 1964. The recovery from these troubles, however, was quite rapid, and the years between 1965 and 1972 witnessed a steady expansion of the economy. Tourism and export-oriented agriculture were the leading sectors. After the end of our period, these promising developments were of course abruptly arrested by an even more serious recurrence of the intercommunal strife.

Turkey possessed the largest economy in the Middle East during the period under review. In 1972 it accounted for 17 per cent of the region's population, and for 21 per cent of its GNP. This is also the Middle Eastern

country with the longest experience in the deliberate promotion of economic development, the Turkish development effort having been sustained by a series of governments starting with that of Ataturk in the 1920's and 1930's. The effort produced definite results during the period analyzed here. Real per capita GNP more than doubled between 1950 and 1972.

The expansion was particularly rapid in the first years of this period. Between 1950 and 1953, real per capita GNP rose by no less than 28 per cent. An increase in the cultivated area was a major factor, new lands being farmed with tractors obtained through an American aid program. But there were limits to the supply of unused arable land, and this kind of agricultural growth could not be long sustained. In some of the following years, particularly 1954, there were also severe droughts, with the result that the period between 1954 and 1961 saw little forward movement. The uneven performance of the Turkish economy at this time has been attributed by some observers to fiscal and monetary mismanagement by the Menderes government. Certainly the balance of payments was in frequent disarray, and the corrective measures applied from time to time, like import controls, had contractionary effects on the economy.

After 1961 the economic expansion was resumed. Several factors contributed. There was a large inflow of capital from Western countries, partly governmental and partly private, and higher rates of investment were therefore attained. The growing inflow of remittances sent by Turkish emigrants working in Western Europe eased the balance of payments situation. Outlets for exports of Turkish fruits and vegetables were developed in the countries of the Common Market, to which Turkey was admitted as an associate member. The tourist sector expanded. Thus Turkish growth during these years involved increasingly intimate ties with Europe.

The economy of Iran went from bust to boom during the period under review. The nationalization of the Anglo-Iranian oilfields in 1951 led to a stoppage of oil production and a general recession which lasted for over three years. There was a recovery after 1954, as oil production resumed under the auspices of the Consortium. The expansion was sustained by the construction of public development projects, and by a private investment boom which the government's liberal credit policies stimulated. A

foreign exchange crisis then intervened, and the remedies adopted -- budgetary cuts and import restrictions -- caused a general contraction between 1961 and 1963.

For the remainder of the period and a few years beyond, Iran experienced a rate of growth which, had it occurred in Western Europe, would have been labeled an economic miracle. Between 1963 and 1972 real per capita GNP rose at an average annual rate of 6.5 per cent. Whether this surge was due more to luck or more to policy is a matter of some controversy. The Shah's regime naturally attributed the success to policy, pointing to the reforms like land redistribution carried out in the name of the White Revolution, and pointing to the internal stability which stimulated private investment , from both domestic and foreign sources. Others have noted the importance of luck in the Iranian takeoff, particularly the opportunities created by the Arab-Israeli war of 1967. Oil supplies from several Arab producers were interrupted, and Iran was able to increase its share of the oil export market. The government's oil revenues rose by 64 per cent between 1966 and 1968. At the same time the weather turned favorable, producing an unusual string of good harvests.

In Afghanistan, real per capita GNP remained at a depressed level. Some economic change did occur during the period, mostly resulting from American and Russian aid programs, but fundamentally the economy remained isolated, segmented, and technologically primitive. Towards the end of the period there was a definite decline due to a series of droughts.

Concluding Thoughts

From this review of Middle Eastern experience between 1950 and 1972, what general causes of economic growth and decline can be identified? The following causes seem important:

1. Oil

   The contribution of the oil industry to Middle Eastern growth has been obvious, both in the producing states and in those benefiting indirectly from production (like Lebanon). It is worth noting, however, that the discovery of oil, its rate of extraction, and its pricing were all largely outside the control of the Middle Eastern governments themselves during the

period under review.

2. Politics

Political events profoundly affected economic growth, usually in a negative way. Several different kinds of events were important:

i) War. The Arab-Israeli war of 1967 illustrates a variety of economic repercussions. Losers tend to suffer economic damage (Egypt), winners may profit economically (Israel). Third parties not directly involved in the conflict may enjoy large windfall gains (Iran) or suffer large windfall losses (South Yemen).

ii) Civil war. Development was often seriously interrupted by civil war (Cyprus, Lebanon, Sudan, Iraq, North Yemen).

iii) Decolonization. The dispossession and expulsion of colonial minorities caused economic disorder, at least in the short run (Morocco, Algeria. Tunisia, South Yemen).

iv) Expropriation. Similarly, the expropriation of native capitalists by radical governments created difficulties (Egypt, Syria, Iraq).

3. Weather

Middle Eastern agriculture generally takes place in arid or semi-arid conditions, and economic growth was often interrupted by drought.

4. Foreign aid

Large-scale programs of foreign aid, from both East and West, led to high growth rates in some countries (Jordan, Israel, Tunisia), and prevented serious declines in others (Egypt).

5. Population growth

In Kuwait and Qatar, high rates of population growth due to immigration caused declines in per capita GNP, though those situations could hardly be described as Malthusian. In most of the rest of the region, high rates of population growth due to high fertility probably slowed the growth of per capita GNP.

In a few cases (Cyprus, Tunisia), emigration or fertility declines held back population growth, with favorable economic results.

It is perhaps a sobering thought for economic planners that these factors were in general not susceptible to much control through economic planning.

APPENDIX

POPULATION AND PER CAPITA GNP
IN MIDDLE EASTERN COUNTRIES, 1950-72

Population at midyear in millions [a]
Per capita GNP for calendar years in constant (1976) U.S. dollars

	AFGHANISTAN		ALGERIA		BAHREIN	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	11.76	135 b	8.75	447 d	0.11	577 f
1951	11.96	137 b	8.93	439 d	0.11	615 f
1952	12.16	139 b	9.13	450 d	0.12	657 f
1953	12.37	141 b	9.37	447 d	0.12	672 f
1954	12.58	138 b	9.44	470 d	0.12	858 f
1955	12.79	140 b	9.71	470 d	0.13	765 f
1956	13.01	143 b	9.96	505 d	0.13	793 f
1957	13.23	149 b	10.14	551 d	0.13	783 f
1958	13.46	147 b	10.39	558 d	0.14	819 f
1959	13.70	149 b	10.57	649 d	0.14	865 f
1960	13.94	156 b	10.80	677 d	0.15	860 f
1961	14.18	156 b	11.02	617 c	0.15	964 f
1962	14.43	151 b	10.92	533 d	0.16	947 f
1963	14.68	162 b	11.20	539 d	0.17	983 f
1964	14.94	165 b	11.68	497 d	0.17	1,016 f
1965	15.20	163 b	11.92	490 d	0.18	1,055 f
1966	15.55	168 b	12.66	467 d	0.19	1,102 f
1967	15.90	168 b	13.08	477 e	0.19	1,151 f
1968	16.33	162 b	13.50	488 e	0.20	1,169 f
1969	16.70	158 b	13.91	505 e	0.20	1,266 f
1970	17.09	153 c	14.33	519 e	0.21	1,237 f
1971	17.48	157 b	14.77	496 e	0.22	1,259 f
1972	17.88	161 b	15.27	536 e	0.22	1,328 f

	CYPRUS		EGYPT		GAZA	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	0.50	949 d	20.53	456 i	0.29	...
1951	0.50	942 d	21.01	458 i	0.30	...
1952	0.51	1,030 d	21.52	459 i	0.31	...
1953	0.52	1,108 d	22.02	443 i	0.31	...
1954	0.52	1,100 d	22.54	446 i	0.32	...
1955	0.53	1,108 d	23.07	450 i	0.32	...
1956	0.54	1,238 d	23.61	453 i	0.33	...
1957	0.55	1,305 d	24.17	460 i	0.34	...
1958	0.56	1,193 d	24.75	476 i	0.35	...
1959	0.57	1,229 d	25.33	433 i	0.36	...
1960	0.57	1,172 d	25.92	510 i	0.38	...
1961	0.58	1,267 c	26.58	518 c	0.37	...
1962	0.58	1,257 g	27.26	538 i	0.38	...
1963	0.59	1,290 g	27.95	573 j	0.39	...
1964	0.59	1,188 g	28.66	608 j	0.41	...
1965	0.59	1,444 h	29.39	635 j	0.43	...
1966	0.60	1,504 h	30.14	643 j	0.44	171 k
1967	0.61	1,676 g	30.91	627 j	0.46	...
1968	0.62	1,741 h	31.69	622 j	0.47	...
1969	0.63	1,900 h	32.50	645 j	0.48	...
1970	0.63	1,939 h	33.33	668 j	0.50	...
1971	0.64	2,158 h	34.08	679 j	0.51	...
1972	0.65	2,273 h	34.83	697 j	0.53	...

	IRAN		IRAQ		ISRAEL	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	16.74	411 l	5.02	254 d	1.26	872 n
1951	17.14	406 l	5.16	269 d	1.52	947 n
1952	17.55	401 l	5.30	289 d	1.61	960 n
1953	17.97	395 l	5.45	396 d	1.65	946 n
1954	18.41	396 l	5.60	457 d	1.69	1,129 n
1955	18.85	402 l	5.76	427 d	1.75	1,223 n
1956	19.30	427 l	5.92	445 d	1.83	1,270 n
1957	19.90	433 l	6.10	427 d	1.94	1,307 n
1958	20.40	445 l	6.31	460 d	2.00	1,388 n
1959	21.00	459 l	6.51	465 d	2.06	1,564 n
1960	21.52	473 l	6.73	506 g	2.11	1,609 n
1961	22.13	477 c	6.95	546 c	2.19	1,714 c
1962	22.77	476 l	7.19	558 g	2.29	1,851 n
1963	23.43	491 l	7.44	530 g	2.38	1,988 n
1964	24.08	515 l	7.71	569 g	2.48	2,105 n
1965	24.81	543 l	7.98	621 g	2.56	2,178 n
1966	25.54	583 l	8.24	636 g	2.63	2,142 n
1967	26.30	629 l	8.50	608 g	2.67	2,158 n
1968	27.08	678 l	8.78	656 g	2.74	2,447 g
1969	27.89	691 l	9.06	670 g	2.82	2,693 h
1970	28.66	723 l	9.36	660 m	2.91	2,817 n
1971	29.78	769 h	9.66	664 m	3.01	2,992 h
1972	30.55	830 h	9.98	657 m	3.08	3,260 n

	JORDAN		KUWAIT		LEBANON	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	1.31	247 o	0.11	1,058 f	1.73	949 p
1951	1.33	292 o	0.12	1,201 f	1.78	975 o
1952	1.34	292 m	0.13	2,480 f	1.82	928 m
1953	1.37	321 m	0.14	5,284 f	1.87	956 d
1954	1.41	345 d	0.16	5,465 f	1.92	1,068 d
1955	1.45	318 d	0.17	6,528 f	1.97	1,125 d
1956	1.50	421 d	0.19	6,065 f	2.03	1,066 d
1957	1.54	421 d	0.21	6,086 f	2.08	1,058 d
1958	1.60	446 d	0.22	6,494 f	2.13	887 g
1959	1.65	465 d	0.25	6,206 f	2.19	916 r
1960	1.71	477 d	0.28	6,738 f	2.25	987 d
1961	1.72	563 c	0.32	6,604 f	2.31	1,043 c
1962	1.76	587 d	0.35	6,287 f	2.37	1,076 m
1963	1.81	582 d	0.34	6,217 f	2.44	1,184 m
1964	1.87	667 d	0.43	6,156 f	2.50	1,196 m
1965	1.93	726 d	0.48	5,858 f	2.57	1,203 m
1966	1.98	735 d	0.52	5,717 f	2.63	1,269 m
1967	2.06	759 d	0.57	5,833 f	2.71	1,275 m
1968	2.12	764 m	0.63	5,240 f	2.79	1,343 m
1969	2.20	787 m	0.69	5,180 f	2.87	1,428 m
1970	2.28	780 m	0.75	5,155 f	2.97	1,444 m
1971	2.35	805 m	0.79	4,704 f	3.05	1,546 m
1972	2.44	820 m	0.84	5,332 f	3.14	1,589 m

	LIBYA		MOROCCO		NORTH YEMEN	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	0.94	219 s	8.95	533 d	3.88	126 w
1951	0.97	235 t	9.11	536 d	3.94	126 w
1952	1.01	252 t	9.34	556 d	4.01	126 w
1953	1.05	269 t	9.57	584 d	4.07	126 w
1954	1.09	288 s	9.84	596 d	4.14	126 w
1955	1.13	314 t	10.11	570 d	4.21	126 w
1956	1.17	343 t	10.40	555 d	4.28	126 w
1957	1.21	373 s	10.67	499 d	4.36	126 w
1958	1.26	389 s	10.99	537 d	4.44	126 w
1959	1.30	458 s	11.35	503 d	4.53	126 w
1960	1.35	523 e	11.64	501 d	4.62	126 w
1961	1.40	633 e	11.94	472 c	4.71	126 w
1962	1.45	805 u	12.24	514 d	4.81	126 w
1963	1.50	1,048 e	12.56	532 d	4.91	126 w
1964	1.56	1,162 e	12.88	524 d	5.02	126 w
1965	1.62	1,483 e	13.21	519 d	5.13	126 w
1966	1.68	1,667 e	13.55	496 v	5.25	126 w
1967	1.74	1,764 e	13.89	519 v	5.37	126 w
1968	1.80	2,188 e	14.25	565 v	5.50	126 w
1969	1.87	2,492 e	14.61	561 v	5.63	126 w
1970	1.34	2,524 e	14.99	575 v	5.77	126 c
1971	2.01	2,327 e	15.38	594 v	5.91	126 w
1972	2.08	2,328 e	15.85	604 v	6.06	126 w

	OMAN		QATAR		SAUDI ARABIA	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	0.50	126 w	0.02	768 f	2.52	524 y
1951	0.50	126 w	0.02	1,266 f	2.57	602
1952	0.50	126 w	0.02	2,286 f	2.63	745 y
1953	0.51	126 w	0.03	3,165 f	2.68	659 y
1954	0.51	126 w	0.03	4,354 f	2.73	737 y
1955	0.52	126 w	0.03	4,735 f	2.79	862 y
1956	0.52	126 w	0.03	4,591 f	2.84	732 y
1957	0.52	126 w	0.04	4,973 f	2.90	777 y
1958	0.53	126 w	0.04	5,531 f	2.96	761 y
1959	0.53	126 w	0.04	5,214 f	3.02	799 y
1960	0.53	126 w	0.05	5,174 f	3.08	827 y
1961	0.54	126 w	0.05	4,347 f	3.14	884 y
1962	0.54	126 x	0.06	4,793 f	3.20	913 y
1963	0.55	168 x	0.06	4,788 f	3.26	1,111 u
1964	0.55	223 x	0.06	4,735 f	3.33	1,272 u
1965	0.57	298 x	0.07	4,888 f	3.40	1,387 u
1966	0.58	396 x	0.07	6,002 f	3.47	1,482 u
1967	0.60	528 f	0.07	6,237 f	3.54	1,608 u
1968	0.62	419 f	0.08	6,747 f	3.62	1,711 u
1969	0.64	1,111 f	0.08	8,900 f	3.71	1,796 u
1970	0.66	1,189 f	0.08	6,999 f	3.80	1,306 u
1971	0.68	1,093 f	0.08	9,119 f	3.90	2,060 u
1972	0.70	1,052 f	0.08	9,688 f	4.00	2,360 u

	SOUTH YEMEN		SUDAN		SYRIA	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	0.89	197 A	8.98	145 d	3.41	416 B
1951	0.91	255 A	9.24	148 d	3.51	400 B
1952	0.93	310 A	9.50	150 d	3.61	483 B
1953	0.95	305 A	9.78	153 d	3.72	482 C
1954	0.97	352 A	10.05	157 d	3.82	541 C
1955	0.99	420 A	10.33	160 d	3.93	507 C
1956	1.01	406 A	10.64	167 d	4.05	548 C
1957	1.03	373 A	10.96	169 d	4.17	542 C
1958	1.06	416 A	11.27	167 d	4.32	506 C
1959	1.08	418 A	11.59	176 d	4.42	485 C
1960	1.10	411 A	11.90	181 d	4.58	469 C
1961	1.12	430 A	12.25	191 c	4.67	500 c
1962	1.15	445 A	12.61	199 d	4.82	539 C
1963	1.18	448 A	12.98	196 d	5.02	575 C
1964	1.20	460 A	13.33	194 d	5.12	616 h
1965	1.24	429 c	13.73	193 d	5.30	609 h
1966	1.28	438 A	14.12	194 d	5.48	572 h
1967	1.32	309 A	14.50	194 g	5.66	583 h
1968	1.36	244 A	14.94	202 g	5.85	588 h
1969	1.40	277 A	15.31	215 m	6.05	657 h
1970	1.44	274 A	15.70	215 m	6.26	650 h
1971	1.47	220 A	16.09	215 m	6.46	694 h
1972	1.51	211 A	16.49	214 m	6.67	738 h

	TUNISIA		TURKEY		UNITED ARAB EMIRATES	
	Population	Per capita GNP	Population	Per capita GNP	Population	Per capita GNP
1950	3.45	381 d	20.62	440 D	0.10	126 w
1951	3.51	378 d	21.44	490 D	0.10	126 w
1952	3.58	417 d	22.02	516 D	0.11	126 w
1953	3.64	425 d	22.62	562 D	0.11	126 w
1954	3.71	426 d	23.23	497 D	0.11	126 w
1955	3.78	397 d	23.85	522 D	0.11	126 w
1956	3.83	418 d	24.55	540 E	0.11	126 w
1957	3.89	395 d	25.27	559 E	0.11	126 x
1958	3.94	440 d	26.02	604 E	0.12	170 x
1959	4.03	413 d	26.78	614 E	0.12	230 x
1960	4.12	453 d	27.51	612 F	0.12	311 x
1961	4.21	475 c	28.24	600 c	0.12	420 x
1962	4.31	473 d	28.93	633 F	0.13	567 f
1963	4.41	482 d	29.66	675 F	0.13	708 f
1964	4.51	489 h	30.39	684 h	0.14	879 f
1965	4.61	490 h	31.15	690 h	0.15	1,470 f
1966	4.72	495 h	31.93	755 h	0.16	3,216 f
1967	4.82	480 h	32.72	766 h	0.17	3,075 f
1968	4.92	507 h	33.54	797 h	0.18	4,040 f
1969	5.03	520 h	34.38	820 h	0.20	4,622 f
1970	5.13	552 h	35.23	850 h	0.23	4,987 f
1971	5.23	603 h	36.11	918 h	0.26	6,933 f
1972	5.33	710 h	37.01	964 h	0.30	6,590 f

a. General sources for population estimates are U.N., Demographic Yearbook and Monthly Bulletin of Statistics and O.E.C.D., National Accounts of Less Developed Countries, 1950-66. Other estimates derived as follows:
   i) for Gaza (1968-72), annual rate of population growth assumed to be 3 per cent;
   ii) for Morocco (1961-70), annual rate of population growth assumed to be constant between census years of 1960 and 1971;
   iii) for North Yemen (1950-64), where the rate of population growth in 1966 was reportedly 2.3 per cent (U.N., Demographic Yearbook, 1973), growth rates for 1950 and 1965 assumed to be 1.5 per cent and 2.2 per cent respectively, with growth rates in intervening years interpolated linearly;
   iv) for Saudi Arabia (1950-72), Edmond Y. Asfour, Saudi Arabia: Long-Term Projections of Supply of and Demand for Agricultural Products, pp. 17, 148.
   v) for United Arab Emirates (1950-72), estimates for 1968 and 1972 from Kevin G. Fenelon, The United Arab Emirates: An Economic and Social Survey, and rates of population growth assumed to be 1.5 per cent in 1950 and 1960, 2 per cent in 1961, 9 per cent in 1968, and 15 per cent in 1972, with growth rates in intervening years interpolated linearly.

b. Annual rate of increase in real GNP from Maxwell J. Fry, The Afghan Economy.

c. Benchmark estimate derived from Equation (1). Data on energy consumption, telephones, and newspaper circulation obtained from UN, Statistical Yearbook.

d. Annual rate of increase in real GNP from O.E.C.D., National Accounts of Less Developed Countries, 1950-66 and 1959-68.

e. Annual rate of increase in real GNP from U.N., Economic Commission for Africa, Survey of Economic Conditions in Africa.

f. Estimated by Equation (3).

g. Annual rate of increase in real GNP from UN, Monthly Bulletin of Statistics.

h. Annual rate of increase in real GNP from UN, Yearbook of National Accounts Statistics.

i. Annual rate of increase in real GNP from Donald Mead, Growth and Structural Change in the Egyptian Economy.

j. Annual rate of increase in real GNP from Robert Mabro and Samir Radwan, The Industrialization of Egypt, 1939-73: Policy and Performance.

k. GNP estimate in Jordanian dinars cited by Brian Van Arkadie, Benefits and Burdens: A Report on the West Bank and Gaza Strip Economies Since 1967 implies a per capita GNP equal to 23.25 per cent of the Jordanian level.

l. Annual rate of increase in real GNP from Julian Bharier, Economic Development in Iran, 1900-70.

m. Annual rate of increase from Equation (4).

n. Annual rate of increase in real GNP from Nadav Halevi and Ruth Klinov-Malul, Economic Development of Israel.

o. Annual rate of increase from Equation (5).

p. Ratio between real GNP in 1950 and in 1953 from Albert Y. Badre, "Economic Development of Lebanon," in Charles A. Cooper and Sidney S. Alexander (eds.), Economic Development and Population Growth in the Middle East. The 1951 and 1952 data cited by Badre are not used here, since he argues that they are based on a deflator which has misleading values in those years.

q. Ratio between real GNP in 1958 and in 1960 from O.E.C.D., National Accounts of Less Developed Countries, 1950-66.

r. Estimated by interpolation based on rates of increase in 1958-59 and 1959-60 derived from Equation (4).

s. Ratios between 1950, 1954, and 1957 and annual rates of increase 1958-60 from Equation (2). Data on current-price GNP from U.S. Department of Commerce, "Basic Data on the Economy of Libya" (Overseas Business Report No. 64-112).

t. Estimated by interpolation, assuming constant annual rate of increase.

u. Benchmark estimate derived from Equation (2). Data on official exchange rates from U.N., Statistical Yearbook, on Libyan current-price GNP from U.N., Yearbook of National Accounts Statistics, and on Saudi current-price GNP from Saudi Arabian Monetary Agency, Annual Report.

v. Annual rate of increase in real GNP from Annuaire Statistique du Maroc.

w. Estimated by extrapolation.

x. During an assumed period of four years of oil exploration and development preceding the first receipt of government oil revenues, per capita real GNP is assumed to increase at a constant annual rate, starting at $126 (the level estimated for North Yemen in 1970).

y. Annual rate of increase from Equation (3).

z. Annual rate of increase in real GNP from Saudi Arabian Monetary Agency, Annual Report.

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A. Real GNP estimated from the following equation:

GNP in 1976 dollars = (126)(Population) + (21.6)(Crude oil imports in metric tons) + (8.6)(Vessel tonnage entering Aden)

The first term on the right-hand side is intended to represent the subsistence component of GNP, the coefficient on population being equal to the per capita GNP of North Yemen (in 1976 dollars) as estimated for 1970. The relative weights of the three components of GNP (subsistence, oil refining and related activities, port services and related activities) are derived from 1965 data on the composition of total output shown in Peter Mansfield (ed.), The Middle East: A Political and Economic Survey (4th edition), and the value of 1965 GNP in 1976 dollars is obtained from Equation (1). Data on oil imports from U.N., Yearbook of International Trade Statistics; data on vessel tonnage from U.N., Statistical Yearbook.

B. Annual rate of increase in real GNP from Samir Makdisi, "Some Aspects of Syrian Economic Growth," Middle East Economic Papers, 1961.

C. Annual rate of increase in real GNP from Syrian Arab Republic, Statistical Abstract.

D. Annual rate of increase in real GNP from Frederic C. Shorter, "Military Expenditures and the Allocation of Resources," in Frederic C. Shorter (ed.), Four Studies on the Economic Development of Turkey.

E. Annual rate of increase in real GNP from Z.Y. Hershlag, Turkey: The Challenge of Growth.

F. Ratio between real GNP in 1960 and in 1963 from U.N., Yearbook of National Accounts Statistics; relative annual rates of increase between 1960 and 1963 from Z.Y. Hershlag, Turkey: The Challenge of Growth.

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